#### PRECAST BOX CULVERTS GENERAL NOTES

#### **GUIDELINES**

THESE GUIDELINE DRAWINGS REPRESENT TYPICAL DETAILS FOR THE DESIGN AND DETAILING OF PRECAST CONCRETE BOX CULVERTS.

THESE SHEETS ARE INCLUDED TO PROVIDE AN EXAMPLE OF THE DRAFTING LAYOUT OF TYPICAL BOX CULVERT STRUCTURES. SEVERAL DIFFERENT CULVERT TYPES ARE SHOWN. THE DETAILS WILL COVER A MAJORITY OF BOX CULVERTS USED IN UTAH.

ALL REINFORCING STEEL DIMENSIONS ARE TO THE CENTERLINE OF THE REINFORCEMENT.

SIZES OF ELEMENTS:

WIDTH: THE MAXIMUM WIDTH OF THE ELEMENT AND ANY PROJECTING REINFORCING SHOULD BE KEPT BELOW 14FT FOR SHIPPING REASONS

WEIGHT: THE MAXIMUM WEIGHT OF EACH ELEMENT SHOULD BE KEPT TO LESS THAN 100KIP.

HEIGHT: MAXIMUM HEIGHT OF ANY ELEMENT INCLUDING PROJECT REINFORCING SHOULD BE KEPT TO LESS THAN 10 FT FOR SHIPPING REASONS.

#### IMPLEMENTATION

IT IS THE DESIGNER'S RESPONSIBILITY TO:

REVIEW THE CONTRACTOR'S DESIGN SUBMITTAL FOR THE BOX CULVERTS. PRECAST BOX CULVERTS ARE DESIGNED AND DETAILED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL PROVISION "2645S PRECAST CONCRETE BOX CULVERT".

DESIGN AND DETAIL ALL OTHER BOX CULVERT COMPONENTS, SUCH AS CUTOFF AND RETURN WALLS, NOSINGS, WINGWALLS, HEADWALLS AND APRONS.

LIST THE GEOTECHNICAL REQUIREMENTS OF THE SITE ON THE PLANS.

DRAW PLAN VIEW, END ELEVATION, TYPICAL TRANSVERSE SECTION, AND LONGITUDINAL SECTION IN ACCORDANCE WITH BRIDGE MANUAL SECTION 4.

APPLICABLE GENERAL NOTES ARE TO BE INCLUDED IN THE PLAN SET.

#### **GENERAL NOTES**

DESIGN BOX CULVERTS IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4TH EDITION WITH ALL INTERIM PROVISIONS EXCEPT AS NOTED OTHERWISE.

CONCRETE: f'c = 4,000 PSI

REINFORCING STEEL (COATED) fy = 60,000 PSI

USE THE UTAH DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (THE LATEST EDITION AND SUPPLEMENTS THERETO WHICH ARE IN EFFECT AT THE DATE OF REQUEST FOR BIDS) FOR MATERIALS, CONSTRUCTION AND WORKMANSHIP.

SHOW LIFTING LOCATIONS ON THE PLANS FOR ALL ELEMENTS EXCEPT THE CULVERT SECTIONS.

THE CULVERT DIMENSIONS SHOULD BE CONSISTENT WITH THE HYDRAULIC CHARACTERISTICS OF THE WATERWAY. HOWEVER, SIZE SELECTION SHOULD BE COORDINATED WITH THE MANUFACTURERS TO BE CONSISTENT WITH STANDARD SIZES THAT ARE READILY AVAILABLE.

COAT ALL MILD REINFORCEMENT AND WELDED WIRE PER UDOT SPECIFICATIONS UNLESS OTHERWISE NOTED.

THE CONTRACTOR MAY SUBSTITUTE ALTERNATE LEVELING DEVICES PROVIDED THEY CAN PRODUCE A STRUCTURE WITHIN THE SPECIFIED ERECTION TOLERANCES.

CHAMFER ALL EXPOSED EDGES AND CORNERS 3/4".

SHOW ESTIMATED SHIPPING WEIGHTS FOR ALL PRECAST ELEMENTS ON CONTRACT DRAWINGS.

#### **INDEX OF SHEETS**

GNBC-1 PRECAST BOX CULVERT - GENERAL NOTES

BC-1 PRECAST BOX CULVERT - TYPE 1 FLARED WINGWALLS

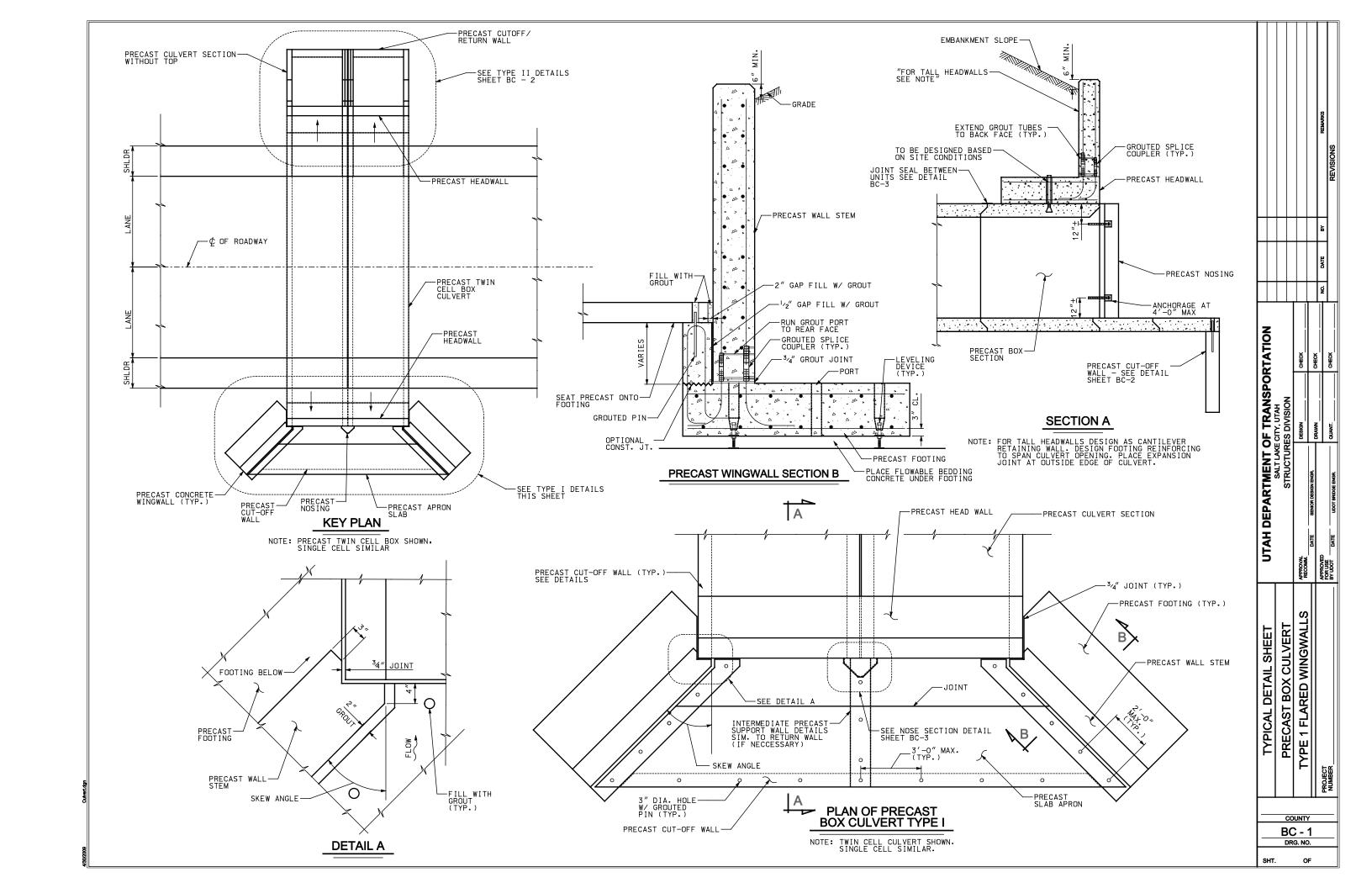
BC-2 PRECAST BOX CULVERT - TYPE 2 PARALLEL WINGWALLS

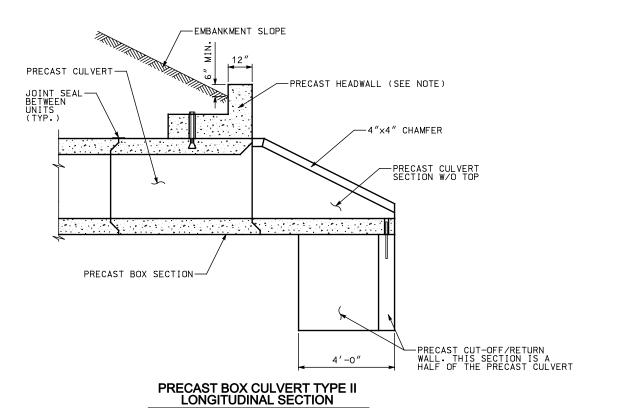
BC-3 PRECAST BOX CULVERT - TYPICAL DETAILS

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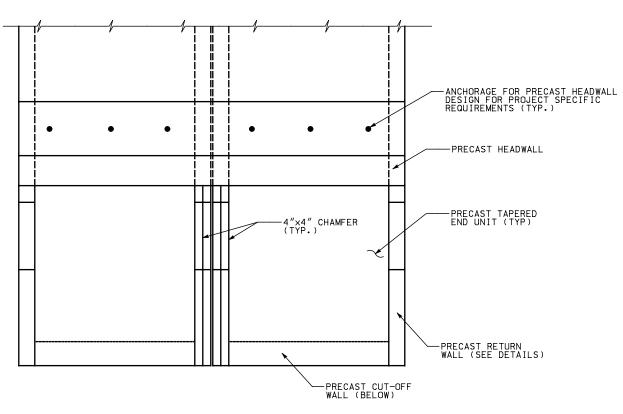


## NOTE: SHORT STEM OF HEAD WALL SHOWN. FOR TALLER WALLS, DETAILS SIMILAR TO THE PRECAST WINGWALL SECTION MAY BE USED.

# CAST 3" DIA. HOLE IN BOTTOM — SLAB OF END UNIT. FILL HOLE WITH NON-SHRINK GROUT AFTER INSTALLATION. -EDGE OF CUT-OFF-WALL SHALL ALIGN WITH EDGE OF BOTTOM SLAB 3'-0" O.C. Δ Δ Δ DRILL 2" DIA. HOLE & GROUT #6 BAR INTO CUT-OFF WALL AFTER PLACING CULVERT END SECTION STRUCTURE BACKFILL-PLACE FLOWABLE BEDDING CONCRETE UNDER CUT-OFF AND RETURN WALLS RETURN WALL-4'-0"

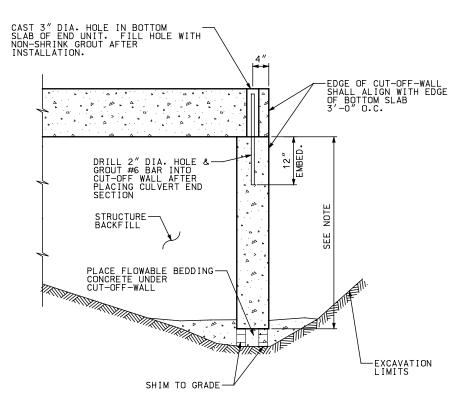
PRECAST CUT-OFF WALL DETAIL WITH RETURN WALL

NOTE: DEPTH OF CUT-OFF/RETURN WALL BASED ON PROJECT SPECIFIC REQUIREMENTS



### PLAN - PRECAST CULVERT TYPE II

NOTE: DOUBLE CELL CULVERT SHOWN SINGLE CELL SIMILAR



NOTE: BRACE CUT OFF WALL IN PLACE DURING BACKFILLING. PLACE BACKFILL EQUALLY ON BOTH SIDES.

RECAST CUI	I-OFF WALL DETAIL
WITHOUT	RETURN WALL

COUNTY BC - 2 DRG. NO. SHT. OF

UTAH DEPARTMENT OF TRANSPORTATION
SALT LAKE CITY, UTAH
STRUCTURES DIVISION

PRECAST BOX CULVERT
TYPE 2 PARALLEL WINGWALLS

TYPICAL DETAIL SHEET

